



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/965,417	09/27/2001	Richard Charles Allen	56233US002	3811
32692	7590	11/16/2005	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			VARGOT, MATHIEU D	
			ART UNIT	PAPER NUMBER
			1732	

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/965,417	Applicant(s) ALLEN ET AL.	
	Examiner Mathieu D. Vargot	Art Unit 1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 13-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/18/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1732

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-11, 13, 14, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over European Patent Application 457,607 in view of British Patent Application 2,326,727.

European –607 discloses the basic claimed method of making a polarization/optical rotator (p.2, lines 5-8) by forming an alignment layer on a substrate, disposing a liquid crystal material on the alignment layer and forming an aligned liquid crystal layer by fixing the liquid crystal material in the aligned condition. See page 22, line 54 through page 23, line 40. The rotator is used in conjunction with other optical devices and polarizers (p. 24, line 16) and hence would form the instant rotator element that is arranged to rotate the polarization axis of the incoming light by at least 5 degrees (p. 24, line 11) to align with another polarization axis. Essentially, the primary reference fails to explicitly teach that the first alignment layer is formed on a polarizing element, the aspects of the additional second alignment and polarizing films and that the polarizing films would be unwound. British Patent –727, as noted in previous actions, discloses a liquid crystal device that modulates incoming light and is constructed in the same manner as the instant, with polarizing films and alignment layers sandwiching a liquid crystal layer in the middle. It would have been obvious to one of ordinary skill in this art to modify the method of the primary reference by forming additional polarizing and

Art Unit: 1732

alignment layers on the rotator film disclosed therein as generally taught by British –727 dependent on the exact purpose desired for the rotator and exact twist angle desired for the liquid crystalline polymer. See European –607, page 24, lines 4-20. The applied references disclose using films and it is notoriously well known to store such on a reel and unwind them as necessary during manufacture. Hence, the limitations of unwinding as set forth in instant claim 231 are considered to be obvious over the art applied.

2. Claims 15-20 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over European Patent Application 457,607 in view of British Patent Application 2,326,727 and Sharp et al –240 (see col. 9, line 66 through col. 10, line 18). European –607 and British –727 disclose the basic claimed method as set forth in paragraph 1, supra, the references failing to teach directing light through additional layers on the liquid crystal layer to polymerize the liquid crystal layer and/or the additional alignment layers. Sharp et al teaches this and such would have been an obvious modification to the combination as applied dependent on the exact type of liquid crystal and alignment layer used. While European –607 teaches immobilizing the liquid crystal material using heat and cooling, photopolymerizable liquid crystals are well known and so is the method of fixing them by photopolymerization.

3. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 1732

In view of the amendment and upon closer review of the prior art, new art has been applied that renders applicant's comments with respect to British -727 as the primary reference now moot. However, this reference—British -727-- is still being relied upon to teach certain aspects of the structure of the instant polarization rotator film. Given the disclosure concerning the rotator in European -607, such is submitted to be obvious, even though the device in British -727 may admittedly function in a different manner than the instant. One of ordinary skill in this art would recognize that the final structure of the rotator would depend on parameters such as polarization desired and alignment of the liquid crystal needed, and one of ordinary skill would know to add additional items such as these (polarizers and alignment films) to achieve the desired rotation.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mathieu D. Vargot whose telephone number is 571 272-1211. The examiner can normally be reached on M. Vargot from 9 to 6.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni, can be reached on 571 272-1196. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

Art Unit: 1732

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M. Vargot
November 12, 2005


Mathieu D. Vargot
Primary Examiner
Art Unit 1732
11/12/05